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LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (original) An apparatus for routing messages in wireless networks, comprising:

a first plurality of filters, each of said plurality of filters adapted to provide a plurality of frequency-based message signals converted from an optically-based signal;

a plurality of mixers connected to the first plurality of filters, the mixers adapted to mix the plurality of frequency-based message signals with a plurality of sub-carriers to generate a plurality of frequency-based sub-carrier modulated message signals;

a frequency generator connected to the plurality of mixers for providing the plurality of sub-carriers to the mixers;

a combiner connected to the mixers for combining the plurality of frequency-based sub-carrier modulated message signals;

a second plurality of filters connected to the combiner and adapted to receive and group the plurality of frequency-based sub-carrier modulated message signals;

a plurality of optical transmitters, each of said plurality of transmitters connected to one of the second plurality of filters for optically converting and transmitting the frequency-based sub-carrier modulated message signals.

2. (original) The apparatus of claim 1 wherein the each of the first plurality of filters is centered at a pre-defined subcarrier frequency.

3. (original) The apparatus of claim 2 wherein the plurality of filters are RF filters.

4. (original) The apparatus of claim 1 wherein the frequency generator generates and applies a particular sub-carrier frequency to one of the mixers according to control information associated with the frequency-based message signal.

5. (original) The apparatus of claim 4 wherein the control information is associated with the frequency-based message signal via a generalized MPLS (GMPLS) label.

6. (original) The apparatus of claim 4 wherein the control information is contained in a header portion of the frequency-based message signal.

7. (original) The apparatus of claim 1 wherein the second plurality of filters are bandpass filters.

8. (original) The apparatus of claim 1 further comprising a receiver device for receiving the optically converted and transmitted sub-carrier modulated message signals and filtering the sub-carrier frequencies from the frequency-based message signals.

9. (currently amended) Method for routing messages in wireless networks comprising the steps of:

optically receiving one or more composite optical signals;

converting said one or more composite optical signals into a plurality of frequency-based message signals;

mixing ~~one or more~~ each of the plurality of frequency-based message signals with a corresponding sub-carrier to generate ~~one or more~~ a plurality of sub-carrier modulated frequency-based signals;

combining and grouping said ~~one or more~~ plurality of sub-carrier modulated frequency-based signals; and

optically converting and transmitting each group of said ~~one or more~~ plurality of sub-carrier modulated frequency-based signals.

10. (original) The method of claim 9 wherein the step of converting includes filtering the received signals at predetermined sub-carrier frequencies to recover the frequency-based message signals contained therein.

11. (original) The method of claim 9 wherein the step of mixing includes interpreting control information associated with the frequency-based message signal to determine the appropriate sub-carrier for mixing.

12. (original) The method of claim 11 wherein the control information is contained within a generalized MPLS label of the frequency-based message signal.

13. (original) The method of claim 11 wherein the control information is contained within a header of the frequency-based message signal and assigns a sub-carrier frequency thereto.